

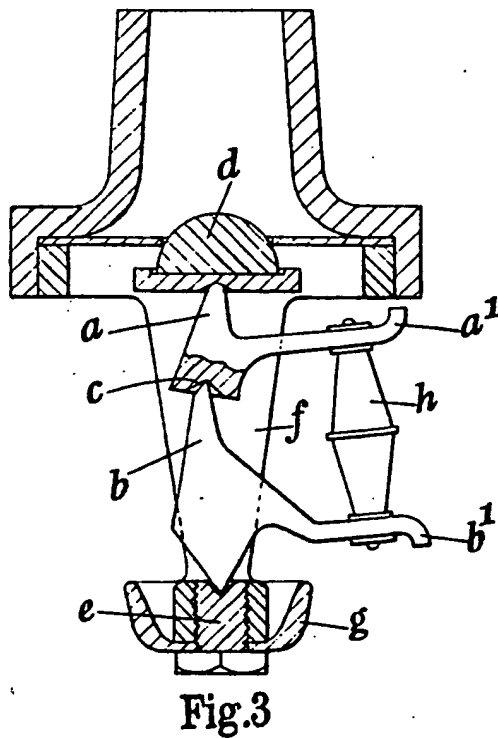
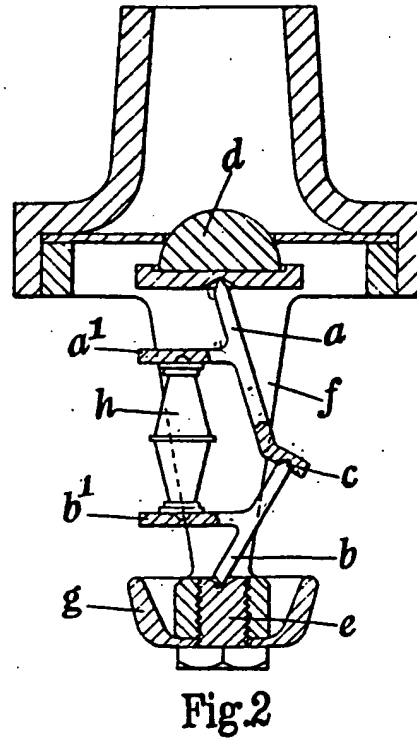
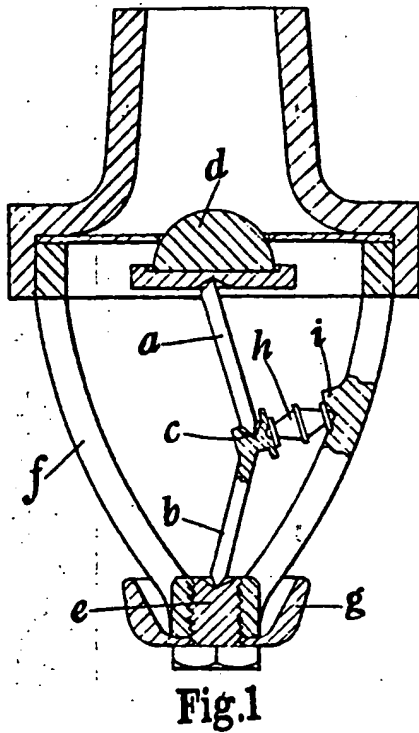
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S.N. 356,740 Group Art Unit 315

346,984 COMPLETE SPECIFICATION

1 SHEET

[This Drawing is a reproduction of the Original on a reduced scale.]



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PATENT SPECIFICATION

Application Date: April 7, 1930. No. 10,964/30.

Complete Left: Dec. 13, 1930.

Complete Accepted: April 23, 1931.

346,984

PROVISIONAL SPECIFICATION.

Improvements in Fire Extinguisher or Sprinkler Heads.

We, MATHER & PLATT LIMITED, a British Company, and ARTHUR ROBERTS, a British Subject, both of Park Works, Manchester, do hereby declare the nature of this invention to be as follows:—

This invention relates to fire extinguisher or sprinkler heads of the type in which the sprinkler valve is supported by a frangible bulb made of fused quartz, glass or other frangible material filled with a liquid which expands and shatters the bulb when a predetermined temperature is reached.

Heretofore the bulb has been interposed as a strut directly between the sprinkler valve and a support upon a part of the sprinkler head, and in such position it has to have sufficient strength to hold the valve in firm contact with its seat (which is usually a spring diaphragm) against the water pressure thereon and it must also be able to resist the effect upon the valve of "water hammer" in the pipe lines. The bulb must therefore be mechanically very strong; the provision of such strength must involve some sacrifice in the sensitivity of the bulb to bursting.

The object of our present invention is to provide an improved arrangement of fire extinguisher or sprinkler head in which the bulb can be made more sensitive to internal pressure due to increase of temperature, so that its complete shat-

tering at the predetermined temperature is more effectively ensured.

Our invention comprises the arrangement wherein the compressive stress imposed upon the frangible bulb is transmitted through levers so that the load carried by the bulb is less than the load carried by the valve controlled by the bulb.

In one convenient application of our invention, there are two strut like elements which bear upon one another through a knife edge and at their outer ends respectively carry the valve and rest upon the supporting bracket which carries the water deflector or sprayer. The struts make an angle with one another so that the load of the valve tends to press their engaging ends to one side. This is resisted by the frangible bulb which is loaded by one strut and bears upon a part of the supporting bracket before referred to.

In another form the two strut like elements have each an arm thereon and the bulb is held in compression between such arms.

We do not limit ourselves to any particular disposition of the levers by which the load of the sprinkler valve is imposed upon the bulb, but may vary the same to suit requirements.

Dated this 1st day of April, 1930.

MARKS & CLERK.

COMPLETE SPECIFICATION.

Improvements in Fire Extinguisher or Sprinkler Heads.

We, MATHER & PLATT LIMITED, a British Company, and ARTHUR ROBERTS, a British Subject, both of Park Works, Manchester, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to fire extinguisher or sprinkler heads of the type in which the sprinkler valve is supported by a frangible bulb made of fused quartz, glass or other frangible material filled

[Price 1/-]

with a liquid which expands and shatters the bulb when a predetermined temperature is reached.

Heretofore the bulb has been interposed as a strut directly between the sprinkler valve and a support upon a part of the sprinkler head, and in such position it has to have sufficient strength to hold the valve in firm contact with its seat (which is usually a spring diaphragm) against the water pressure thereon and it must also be able to resist the effect upon the valve of "water hammer" in the pipe

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lines. The bulb must therefore be mechanically very strong; the provision of such strength must involve some sacrifice in the sensitivity of the bulb to bursting.

5 The object of our present invention is to provide an improved arrangement of fire extinguisher or sprinkler head in which the bulb can be made more sensitive to internal pressure due to increase
10 of temperature, so that its complete shattering at the predetermined temperature is more effectively ensured.

Our invention comprises the arrangement wherein the compressive stress imposed upon the frangible bulb is transmitted through levers so that the load carried by the bulb is less than the load carried by the valve controlled by the bulb.

20 The accompanying explanatory drawings show in sectional elevation three constructions of sprinkler head in accordance with this invention.

In the application of our invention, illustrated at Figure 1, there are two strut like elements *a*, *b*, which bear upon one another through a knife edge at *c* and at their outer ends respectively carry the valve *d* and rest upon a screwed stud *e* which threads into the supporting bracket *f* and holds in place the water deflector or sprayer *g*. The struts *a* and *b* make an angle with one another so that the load of the valve *d* tends to press their engaging ends to one side. This pressure is resisted by the frangible bulb *h* which is loaded by one strut and bears upon a part
25 of the supporting bracket *f* referred to.

In the forms shown in Figures 2 and 3,

the two strut like elements have each an arm *a'*, *b'* thereon and the bulb *h* is held in compression between such arms.

We do not limit ourselves to any particular disposition of the levers by which the load of the sprinkler valve is imposed upon the bulb, but may vary the same to suit requirements.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. In fire extinguisher or sprinkler heads, of the type specified, the arrangement wherein the compressive stress imposed upon the frangible bulb is transmitted through levers so that the load carried by the bulb is less than the load carried by the valve controlled by the bulb.

2. In fire extinguisher or sprinkler heads as claimed in Claim 1, the provision between the sprinkler valve and the bracket where it carries the water deflector of two struts disposed at an angle to one another so that the valve pressure tends to press the engaging ends to one side against the resistance of the bulb.

3. In fire extinguisher or sprinkler heads as claimed in Claim 2, the arrangement of the bulb between arms upon the two struts disposed at an angle to one another.

4. Improved fire extinguisher or sprinkler heads substantially as described and as illustrated.

Dated this 5th day of December, 1930.
MARKS & CLERK.